REMARKS/ARGUMENTS

Applicant respectfully requests further examination and reconsideration in view of the instant response. Claims 1-27 remain pending in the present case. Claims 1-27 are rejected.

Statement of Common Ownership

The Examiner is respectfully directed to MPEP § 706.02(l)(1) and MPEP § 706.02(l)(2).

The instant application with Serial No. 10/789,733 and the asserted art U.S. Patent Application Publication No. 2004/0158600 by Markstein et al., hereinafter referred to as "Markstein," were, at the time the invention of the instant application was made, subject to an obligation of assignment to the same assignee.

35 U.S.C. Section §103(a) Rejection – Claims 1 and 23

The Office Action mailed November 20, 2008, hereinafter referred to as the "instant Office Action," asserts that Claims 1 and 23 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,564,162 by Erskine et al., hereinafter referred to as "Erskine," in view of U.S. Patent No. 6,101,501 by Breslau et al., hereinafter referred to as "Breslau." Applicant has reviewed Erskine and Breslau and respectfully submits that the claimed embodiments as recited in Claims 1 and 23 are patentable over Erskine and Breslau for at least the following rationale.

"As reiterated by the Supreme Court in KSR, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries" including "[a]scertaining the differences between the claimed invention and the prior art" (MPEP 2141(II)). "In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences <u>themselves</u> would have been obvious, but whether the claimed invention <u>as a whole</u> would have been obvious" (emphasis in original; MPEP 2141.02(I)). Applicant notes that "[t]he prior art reference (or references when combined) need not teach or suggest all the claim limitations, however, <u>Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art</u>" (emphasis added; MPEP 2141(III)).

Applicant respectfully submits that "[i]t is improper to combine references where the references <u>teach away from</u> their combination" (emphasis added; MPEP 2145(X)(D)(2); *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)). Applicant respectfully notes that "[a] prior art reference must be considered in its entirety, i.e., as a <u>whole</u>, including portions that would lead away from the claimed invention" (emphasis in original; MPEP 2141.02(VI); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)). Applicant respectfully submits that there is no motivation to combine the asserted teachings of Erskine and Breslau, because Erskine <u>teaches away from</u> the suggested modification.

Applicant respectfully directs the Examiner to independent Claim 1 that recites

that an embodiment of the present invention is directed to (emphasis added):

> A method for testing floating point hardware in a processor while executing a computer program, comprising:
> executing a first set of code of said computer program <u>without employing said floating point hardware</u>, said first set of code having a first floating point instruction, thereby obtaining an emulated result;
> executing said first floating point instruction utilizing said floating point hardware, thereby obtaining a hardware-generated result; and
> comparing said emulated result with said hardware-generated result.

Claim 23 includes similar recitations as Claim 1.

First, Applicant respectfully submits that Erskine <u>teaches away from</u> "executing a

first set of code of said computer program <u>without employing said floating point</u>

<u>hardware</u>, said first set of code having a first floating point instruction, thereby obtaining

an emulated result" (emphasis added) as claimed.

Applicant understands Erskine to teach "running a code sequence on the device

at a first operating point to generate predicted results and then running the same code

sequence on the device at a second operating point defined by changing an electrical

parameter of the first operating point to generate actual results," (Abstract). Moreover,

Erskine teaches, "[s]oftware algorithms and, optionally, <u>software emulation</u> are used to

initially construct a code sequence having specific probabilities of various instruction

types, various data types, etc. The code sequence may be any desired length, such as

20-100 lines of code, for instance. The code sequence will further have an initial

context when created that is <u>reflective of values contained</u> within general registers, <u>floating point registers,</u> and cache memory of the device," (emphasis added; col. 3, lines 40-48). Erskine further teaches, "predicted results for the initial code sequence, i.e. before permutations or changes have occurred to the code sequence, are generated by either running the initial code sequence on the device at a first operating point of the device or by performing software emulation on the initial code sequence," (col. 3, lines 52-57).

Accordingly, Applicant understands Erskine to teach using either running a code sequence on the device or by performing a software emulation on the initial code sequence, wherein the initial code sequence is reflective of values contained within floating point registers. Therefore, Applicant respectfully submits that Erskine teaches running code <u>using floating point hardware,</u> either via the code sequence or actual hardware. Therefore, by teaching running code using floating point hardware, either via the code sequence or actual hardware, Applicant respectfully submits that Erskine <u>teaches away from</u> "executing a first set of code of said computer program <u>without</u> <u>employing said floating point hardware,</u> said first set of code having a first floating point instruction, thereby obtaining an emulated result" (emphasis added) as claimed.

Applicant notes that the instant Office Action recites the Erskine "fails to explicitly disclose not using floating point software" (instant Office Action; page 3, lines 11-12). Applicant understands Breslau to be relied on as overcoming this shortcoming.

Second, Applicant respectfully submits that there is no motivation to combine the asserted teachings of Erskine and Breslau, because Erskine <u>teaches away from</u> the suggested modification.

Applicant understands the instant Office Action to assert that Breslau teaches "executing a first set of code of said computer program without employing said floating point hardware (col. 8, lines 51-67)" (instant Office Action; page 3, lines 13-15). However, by <u>teaching running code using floating point hardware</u>, either via the code sequence or actual hardware, Applicant respectfully submits that Erskine <u>teaches away from</u> "executing a first set of code of said computer program <u>without employing said floating point hardware</u>, said first set of code having a first floating point instruction, thereby obtaining an emulated result" (emphasis added) as claimed. Therefore, Applicant respectfully submits that Breslau does not overcome the shortcomings of Erskine.

Applicant respectfully asserts that the combination of Erskine and Breslau, <u>as a whole</u>, does not satisfy a *prima facie* case of obviousness under 35 U.S.C. §103(a) of the claimed embodiments of the present invention as recited in independent Claims 1 and 23, that these claims overcome the rejection under 35 U.S.C. §103(a), and that these claims are thus in a condition for allowance.

<u>35 U.S.C. Section §103(a) Rejection – Claims 2, 4-7, 9-14, 16-19, 21, 22, and 24-27</u>

Claims 2, 4-7, 9-14, 16-19, 21, 22, 24-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over Erskine in view of Breslau, further in view of U.S. Patent No. 6564,162 by Van Dyke, hereinafter referred to as "Van Dyke." Applicant has reviewed Erskine, Breslau and Van Dyke and respectfully submits that the claimed embodiments as recited in Claims 2, 4-7, 9-14, 16-19, 21, 22, 24-27 are patentable over Erskine, Breslau and Van Dyke for at least the following rationale.

Claims are 1, 13 and 23 are independent claims. Claims 2, 4-7, 9-14, 16-19, 21, 22, 24-27 are dependent on independent Claims 1, 13 and 23, and include the recitations of independent Claims 1, 13 and 23. Hence, by demonstrating that Erskine, Breslau and Van Dyke do not show or suggest the limitations of Claims 1, 13 and 23, it is also demonstrated that Erskine, Breslau and Van Dyke do not show or suggest the embodiments of Claims 2, 4-7, 9-14, 16-19, 21, 22, 24-27.

As presented above, Applicant respectfully submits that Erskine <u>teaches away from</u> "executing a first set of code of said computer program <u>without employing said floating point hardware</u>, said first set of code having a first floating point instruction, thereby obtaining an emulated result" (emphasis added) as recited in independent Claim 1 and the similar embodiment of independent Claim 23. Applicant respectfully notes that independent Claim 13 includes the similar recitation of "executing a first floating point operation of said computer program by <u>emulating said floating point operation with a set of non-floating point operations</u>, thereby obtaining an emulated result" (emphasis added). Moreover, as presented above, Applicant respectfully

submits that there is no motivation to combine the asserted teachings of Erskine and Breslau, because Erskine <u>teaches away from</u> the suggested modification.

Applicant has also reviewed Van Dyke, and respectfully submits that Van Dyke does not overcome the shortcomings of Erskine. In particular, Applicant respectfully submits that Van Dyke does not teach, describe or suggest "executing a first set of code of said computer program <u>without employing said floating point hardware</u>, said first set of code having a first floating point instruction, thereby obtaining an emulated result" (emphasis added) as recited in independent Claim 1 and the similar embodiments of independent Claim 13 and 23.

Applicant respectfully asserts that the combination of Erskine, Breslau and Van Dyke, <u>as a whole</u>, does not satisfy a *prima facie* case of obviousness under 35 U.S.C. §103(a) of the claimed embodiments of the present invention as recited in independent Claims 1, 13 and 23, that these claims overcome the rejection under 35 U.S.C. §103(a), and that these claims are thus in a condition for allowance. Therefore, Applicant respectfully submits that Erskine, Breslau and Van Dyke also does not render obvious the additional claimed embodiments as recited in Claims 2, 4-7 and 9-12 that depend from independent Claim 1, Claims 14, 16-19, 21 and 22 that depend from independent Claim 13, and Claims 24-27 that depend from independent Claim 23, that Claims 2, 4-7, 9-12, 14, 16-19, 21, 22, 24-27 also overcome the rejection under 35 U.S.C. § 103(a), and are in a condition for allowance as being dependent on an allowable base claim.

35 U.S.C. Section 103(a) Rejection – Claims 3 and 8

Claims 3 and 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Erskine in view of Breslau, further in view of Markstein. As presented above, Applicant respectfully notes that the instant application and Markstein were, at the time the invention of the instant application was made, subject to an obligation of assignment to the same assignee. Moreover, Applicant respectfully submits that Markstein only qualifies as asserted art under subsection (e) of 35 U.S.C. §102.

Therefore, Markstein is disqualified under 35 U.S.C. §103(c) as prior art in a rejection under 35 U.S.C. §103(a). Hence, the basis for the instant rejection of Claim 3 and 8 is traversed.

Moreover, Applicant respectfully notes that no grounds of rejection remain for Claims 3 and 8. Therefore, Applicant respectfully submits that Claims 3 and 8 are in condition for allowance.

35 U.S.C. Section 103(a) Rejection – Claims 15 and 20

Claims 15 and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Erskine in view of Breslau, further in view of Van Dyke, and yet further in view of Markstein. As presented above, Applicant respectfully notes that the instant application and Markstein were, at the time the invention of the instant application was made, subject to an obligation of assignment to the same assignee. Moreover, Applicant respectfully submits that Markstein only qualifies as asserted art under subsection (e) 35 U.S.C. §102.

Therefore, Markstein is disqualified under 35 U.S.C. §103(c) as prior art in a rejection under 35 U.S.C. §103(a). Hence, the basis for the instant rejection of Claim 3 and 8 is traversed.

Moreover, Applicant respectfully notes that no grounds of rejection remain for Claims 15 and 20. Therefore, Applicant respectfully submits that Claims 15 and 20 are in condition for allowance.

CONCLUSION

In light of the above remarks, Applicant respectfully requests allowance of Claims 1-27.

Based on the arguments presented above, Applicant respectfully asserts that Claims 1-27 overcome the rejections of record, and therefore Applicant respectfully solicits allowance of these claims.

The Examiner is invited to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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